

VARIATION OF THE MALE CLASPER OF *CERACLEA*  
*ANCYLUS* (VORHIES) (TRICHOPTERA:  
LEPTOCERIDAE) IN SASKATCHEWAN<sup>1</sup>

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ABSTRACT: Variation in the genitalia of adult males of *Ceraclea ancylus* (Vorhies) is discussed and the possibility of misidentifying variant specimens is noted.

To separate closely related species, taxonomists select diagnostic characters based primarily on an examination of the preserved material and the published taxonomic information available for each species. Often, however, knowledge of the variation within a species is incomplete because certain parts of the range of a species are poorly collected. A character chosen to distinguish a species in one part of its range may not serve to distinguish that species in another part of its range. This paper reports on the difficulty of identifying certain male specimens of the species *Ceraclea ancylus* (Vorhies) using a recently constructed key to adult males of the genus *Ceraclea* because these specimens possess an unusual and previously undescribed variation of the clasper.

The males of the North American caddisfly species *Ceraclea ancylus* (Vorhies) have been previously characterized as having a clasper which has a long ventral lobe tipped with a single large apical spine (see Betten, 1934; Ross, 1944; Morse, 1975). The presence of a subapical spine on the male clasper of *C. ancylus* has never been indicated in publications dealing with this species. This paper reports on the finding in Saskatchewan, Canada of males of *C. ancylus* from several different localities whose claspers bear a subapical spine.

RESULTS

Of ten adult males of *C. ancylus* collected by me in Saskatchewan, three specimens (each from a different locality, Figure 1) had a subapical spine on a clasper, either on the right clasper (one specimen) or on the left clasper (two specimens). No specimens were found with a subapical spine on both claspers. The genitalia of each of the three variant males, in respect of the shape of the aedeagus (compare Figure 4 with Figure 9D in Morse (1975)) and the shape of the ventral lobe and the mesal ridge of the clasper (compare Figures 2 and 3 with Figure 774C in Ross (1944) and Figure 95C in Morse

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(1975), respectively) indicate that these specimens belong to the species *C. ancyclus* (Morse, pers. comm., 1978; excluding references to figure numbers).

## DISCUSSION

Morse (1975) provides keys for the identification of adult males of the genus *Ceraclea*. Specimens of *C. ancyclus* lacking the subapical spine on the claspers can readily be identified using Morse's key to the males of the subgenus *Arthripsodina*. Variant male specimens of *C. ancyclus* described above can not be identified using Morse's key because at step 28, for North American *Ceraclea* material, the key leads to *Ceraclea flava* (Banks) if a subapical spine is present on both claspers and to *C. ancyclus* and *Ceraclea neffi* (Resh)\* if a subapical spine is absent on both claspers. On the basis of the subapical spines it is impossible to determine the identity of the variant males of *C. ancyclus* in Morse's key since they have a subapical spine on one clasper. Fortunately, the morphology of the aedeagus and the mesal ridge of the clasper are distinctly different between *C. ancyclus* and *C. flava* so that these two species can readily be distinguished (compare drawings 93D with 95D and 93C with 95C in Morse (1975)).

Morse (pers. comm., 1978) speculated that the occasional presence of the subapical spine on the male clasper of *C. ancyclus* may result from introgressive hybridization, from a mutation or from ancestral genes for the subapical spine which can occasionally express themselves in some Saskatchewan populations. Presumably, if hybridization caused the appearance of the subapical spine on the clasper of *C. ancyclus* males, *C. ancyclus* would have to interbreed with adults of the closely related species, *C. flava*, the males of which have a subapical spine on each clasper. *C. flava* was recorded by Cushing (1961) from the Montreal River system in the boreal forest region of Saskatchewan. However, I have been unable to verify the occurrence of this species in Saskatchewan during three years of intensive collecting of caddisflies in the same region. Oliver (1960) conducted light trap studies near Lac La Ronge, Saskatchewan and, although he recorded *C. ancyclus* in this study, he also did not collect adults of *C. flava*. If *C. flava* does not occur in Saskatchewan, then hybridization has to be ruled out as an explanation for the appearance of a subapical spine on either clasper of *C. ancyclus* males in Saskatchewan. It is more likely that the presence of the subapical spine in certain *C. ancyclus* individuals is the result of a mutation or of the occasional expression of a recessive gene or group of genes in some Saskatchewan populations of *C. ancyclus*.

\*Both variant and normal males of *C. ancyclus* can be separated from *C. neffi* on the basis of the shape of the ventral lobe of the claspers, the width of the tenth tergite, in lateral aspect, and the morphology of the aedeagus (see Morse, 1975).

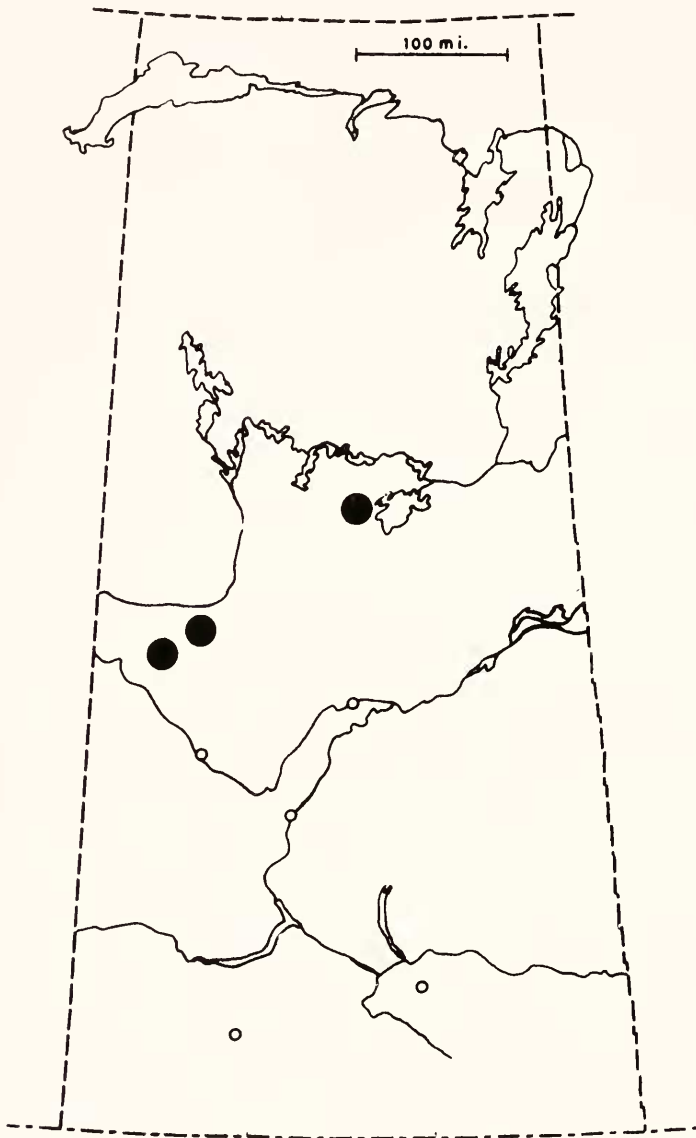
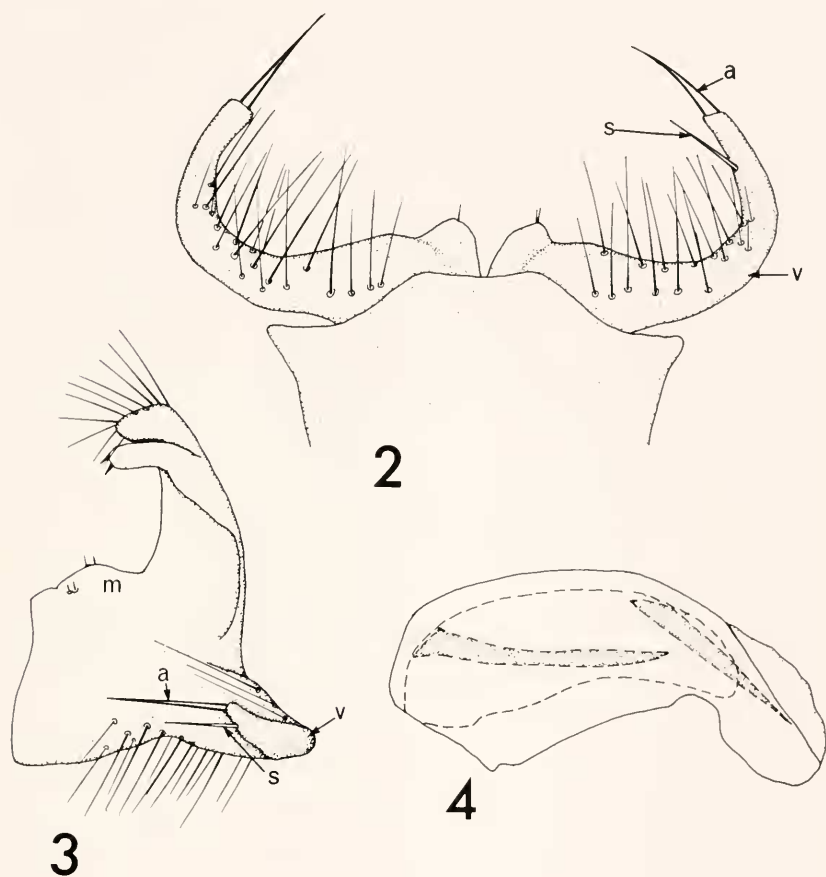


Fig. 1. Saskatchewan collection sites of variant adult males of *Ceraclea ancylus*.



Figs. 2-4. Genitalia of variant *Ceraclea ancylus* males: 2, ventral aspect of genitalia; 3, clasper, caudal aspect; 4, aedeagus, lateral aspect; a = apical spine, m = mesal ridge of clasper, s = subapical spine, v = ventral lobe of clasper.

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## INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

The following Opinion has been published recently by the International Commission on Zoological Nomenclature (see Bulletin of Zoological Nomenclature, Volume 35, part 3, February '79).

*Opinion No. 1115* (p. 175) *Nysson* Latreille (Hymenoptera, SPHECIDAE) validated as from 1796.

The Commission cannot supply separates of Opinions.